

**LITERATURE STUDY ON THE ROLE OF THE TEACHING FACTORY MODEL
IN IMPROVING THE WORK READINESS OF VOCATIONAL SCHOOL
STUDENTS**

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ABSTRACT

This study aims to analyze the role of the Teaching Factory (TeFa) learning model in improving the competence and work readiness of Vocational High School (SMK) students. The research uses a literature study method by collecting, reviewing, and analyzing various relevant previous studies from national journals, international journals, and scientific proceedings. The selection of data sources is carried out based on the criteria for the suitability of research variables, the use of standard language, publications in the last five years, and have been published in scientific journals. The data analysis technique uses the content analysis method through the process of selecting, comparing, merging, and interpreting data to obtain valid conclusions. The results of the study show that the Teaching Factory model plays a significant role in improving students' technical competencies (hard skills) and non-technical skills (soft skills), such as discipline, responsibility, communication, teamwork, adaptability, and confidence. In addition, the Teaching Factory is able to create a real work experience through production-based learning according to industry standards so as to increase students' work readiness, practical ability, learning motivation, and career readiness. The success of the implementation of the Teaching Factory is also influenced by the alignment of the curriculum and the school's partnership with the industrial world. Although there are still obstacles in the form of limited facilities, teacher competence, and industrial cooperation, the Teaching Factory remains an effective vocational learning model in preparing competent, adaptive, and job-ready vocational school graduates.

Keywords: *Teaching Factory, job readiness, student competence, vocational education*

ABSTRAK

Penelitian ini bertujuan untuk menganalisis peran model pembelajaran Teaching Factory (TeFa) dalam meningkatkan kompetensi dan kesiapan kerja siswa Sekolah Menengah Kejuruan (SMK). Penelitian ini menggunakan metode studi literatur dengan mengumpulkan, menelaah, dan menganalisis berbagai penelitian terdahulu yang relevan dari jurnal nasional, jurnal internasional, dan prosiding ilmiah. Pemilihan sumber data dilakukan berdasarkan kriteria kesesuaian variabel penelitian, penggunaan bahasa yang baku, publikasi dalam lima tahun terakhir,

serta telah diterbitkan pada jurnal ilmiah. Teknik analisis data menggunakan metode analisis isi (content analysis) melalui proses seleksi, perbandingan, penggabungan, dan interpretasi data untuk memperoleh kesimpulan yang valid. Hasil penelitian menunjukkan bahwa model Teaching Factory berperan signifikan dalam meningkatkan kompetensi teknis (hard skills) dan keterampilan nonteknis (soft skills) siswa, seperti disiplin, tanggung jawab, komunikasi, kerja sama tim, kemampuan beradaptasi, dan kepercayaan diri. Selain itu, Teaching Factory mampu menciptakan pengalaman kerja nyata melalui pembelajaran berbasis produksi yang sesuai dengan standar industri sehingga dapat meningkatkan kesiapan kerja, kemampuan praktik, motivasi belajar, dan kesiapan karier siswa. Keberhasilan implementasi Teaching Factory juga dipengaruhi oleh keselarasan kurikulum serta kemitraan antara sekolah dan dunia industri. Meskipun masih terdapat berbagai kendala berupa keterbatasan sarana dan prasarana, kompetensi guru, serta kerja sama industri, Teaching Factory tetap menjadi model pembelajaran vokasional yang efektif dalam mempersiapkan lulusan SMK yang kompeten, adaptif, dan siap kerja.

Kata Kunci: Teaching Factory, kesiapan kerja, kompetensi siswa, pendidikan kejuruan

A. Introduction

Vocational High School (SMK) is an educational unit specifically designed to prepare students to be ready to enter the world of work with technical and vocational competencies that are relevant to industrial needs. However, the gap between the quality of vocational school graduates and the expectations of the business and industry is still a problem that continues to be debated in the discourse of vocational education in Indonesia. Data from the Central Statistics Agency as of February 2024 noted that the open unemployment

rate of vocational school graduates is still at 8.63%, making it the level of education with the highest unemployment rate compared to other levels of education, including high school graduates which only reached 7.74% (Badan Pusat Statistik, 2025). This fact indicates that the learning system that has been implemented in vocational schools has not been optimal enough in forming graduates who are truly ready to work, so that the renewal of the learning approach is a necessity that cannot be postponed.

One of the innovative learning models that is considered to be able to answer these challenges is the

Teaching Factory (TEFA). Teaching Factory is a real production-based learning model that integrates industrial work principles, standards, and culture into the school environment, so that students gain authentic work experience during the learning process (Muhitasari & Purnami, 2022; Suciani, 2023; Sulistyowati et al., 2025). In this model, schools no longer function solely as a place for knowledge transfer, but rather transform into production units that produce goods or services of economic value with quality standards that can be accounted for to real consumers in the market (Mahanani et al., 2024; Prasetyo, 2025). This approach essentially distinguishes the Teaching Factory from the conventional and product-oriented model of work practices.

The urgency of developing Teaching Factories in Indonesian Vocational Schools is getting stronger after various national policies expressly encourage its implementation. The government through Presidential Instruction Number 9 of 2016 concerning Vocational Revitalization has made the Teaching Factory one of the main

pillars to improve the quality of vocational education, with the target of implementation in all public and private vocational schools gradually. Vocational schools that have consistently implemented Teaching Factories have shown an increase in the absorption of graduates in the industrial world up to 42% higher than vocational schools that have not implemented them, a figure that confirms the relevance of the policy empirically (Putra & Wijaya, 2023).

Kesiapan kerja (work readiness) siswa SMK merupakan konstruk multidimensional yang mencakup kompetensi teknis, sikap profesional, kemampuan bekerja dalam tim, kedisiplinan, dan kapasitas pemecahan masalah dalam konteks kerja yang nyata. Kesiapan kerja sebagai kondisi menyeluruh yang mencerminkan kematangan fisik, mental, dan kompetensi seseorang untuk memasuki dan bertahan dalam lingkungan kerja yang dinamis dan kompetitif (Saputra & Jalinus, 2020; Yolanda et al., 2023). In line with that, Mulyasa et al., (2023) emphasized that the work readiness of vocational school students is not only determined by the mastery of technical competencies alone, but also by the

extent to which students have been exposed to real work experience that reflects the real conditions and demands of the industry (Azmi Asmuni Majid, 2021). These two dimensions, namely technical competence and authentic work experience, can ideally be developed simultaneously through the application of a well-designed Teaching Factory model.

Theoretically, the advantages of Teaching Factory in shaping work readiness can be explained through the theory of experience-based learning in the context of Indonesian vocational education, namely the learning cycle through concrete experiences, reflection, conceptualization, and active experimentation that occurs in the production process of the Teaching Factory significantly increases the depth of understanding of students' work competencies compared to lecture-based and demonstration-based learning methods (Fauzi et al., 2025). These findings reinforce the argument that students' active involvement in real production processes is not just a complementary pedagogical strategy, but is at the core of the formation of meaningful and sustainable vocational competence.

The psychological dimension of job readiness has also been addressed in recent studies. Vocational school students who participated in Teaching Factory learning consistently for at least one semester showed a significant increase in the indicator of vocational self-efficacy, namely self-confidence in the ability to complete work tasks under time pressure and industry quality standards (Haslinda & Cahya, 2026). Meanwhile, students in the Teaching Factory were positively and significantly correlated with increased intrinsic motivation, clearer career orientation, and reduced anxiety about the transition from school to work (Nuryakin et al., 2025; Prihandari et al., 2022). These two findings together show that the Teaching Factory not only works at the level of visible technical competence, but also forms the psychological foundation that is an important prerequisite for true job readiness.

The aspect of partnership between vocational schools and the industrial world is also a critical factor that determines the quality of the implementation of the Teaching Factory. The success of the Teaching Factory depends heavily on the depth

and quality of cooperation between the school and industrial partners, where industry involvement should not stop at the provision of internships alone, but should include setting production standards, supervising the work process, and evaluating the competencies of graduates directly (Wardani et al., 2024).

Based on the above description, the Teaching Factory model holds enormous potential in transforming the quality of learning in vocational schools and comprehensively improving student work readiness. This literature study is here to summarize and systematically analyze the findings of various recent studies on the role of Teaching Factory in improving the work readiness of vocational school students, in order to provide a solid conceptual and empirical foundation for the development of policies, learning practices, and future research agendas in the field of vocational education in Indonesia.

B. Method

In this study, a literature study research was used. Literature studies are carried out by collecting various references and previous research

which are then compiled to draw conclusions. The results of the compilation from previous research are then used to conclude: (1) What is the *Teaching Factory* learning model. (2) What is the role of *the Teaching Factory* model in improving students' competence and work readiness.

According to Dunford (2003), the following are the steps in literature study research, namely: 1) Determining the theme. 2) The author seeks information necessary for the research. 3) Ensure the purpose of the research. 4) Collect data sources relevant to the topic and purpose of the research. 5) Presenting data. 6) Preparation of reports which includes the collection of all data that has been collected and presents it accurately, as well as citing all relevant sources.

The data for this study comes from the results of previous researches, both from national and international journals, and proceedings with certain criteria, namely: 1) having independent variables and binding according to the research being conducted, 2) using standardized language that has been improved, 3) references used in the last 5 years, 4) having been published in research journals.

The analysis technique in this study is to use the content analysis method to obtain valid conclusions. In this analysis, selection, comparison, and merger are carried out so that relevant results are obtained. The data collected from the results of this analysis are secondary data, namely research results such as articles, both from national and international journals, as well as proceedings relevant to the focus of the research, namely the role of *the Teaching Factory* model in improving students' competence and work readiness.

C. Result and Discussion

In this study, the author is looking for research journals that are relevant to the research title. The data source comes from the results of previous research, both in the form of national journals, international journals, and proceedings that meet certain criteria. The author selected five articles that were considered to have met the criteria, namely: 1) have variables that are in accordance with the research on the Teaching Factory model, 2) use an improved standard language, 3) the references used are from the last 5 years, and 4) have been published in research journals.

By meeting these four indicators, the author describes the five journals in the form of a table to facilitate the process of analysis and drawing conclusions related to the application of the Teaching Factory model in improving students' competence and work readiness.

Berikut Table 1 yang telah dirapikan sesuai format artikel ilmiah internasional:

Table 1. Publication Data from Relevant Journals

No.	Journal Title	Research Objectives	Results and Discussion
1	Implementation of Teaching Factory and Industrial Technical Skills to Improve Vocational High School Students' Work Readiness (2020)	To determine the contribution of Teaching Factory implementation and Industrial Technical Skills toward vocational high school students' work readiness in facing industrial demands.	The findings indicate that Teaching Factory and Industrial Technical Skills positively influence students' work readiness. Learning activities that simulate industrial environments enhance students' technical abilities, adaptability, and preparedness for employment. Teaching Factory provides authentic work experiences through projects and practical activities aligned with industry standards.
2	The Influence of Teaching Factory Learning on Vocational School Students' Work Practices (2025)	To examine the effect of Teaching Factory learning on the work-practice abilities of students in the Heavy Equipment Engineering Program at SMK Negeri 3 Gowa.	The study revealed that Teaching Factory learning has a positive and significant effect on students' practical work skills, with a contribution value of 46.2%. Students become more skilled, disciplined, responsible, and capable of working according to industrial standard operating procedures (SOPs). Industry involvement further strengthens students' readiness for employment.
3	Literature Review: The Role of the Teaching Factory	To systematically examine the role of the Teaching Factory in enhancing students'	The Teaching Factory model plays an important role in enhancing students'

No.	Journal Title	Research Objectives	Results and Discussion
	Learning Model in Improving Career Readiness of Vocational School Students (2025)	Factory learning model in improving vocational students' readiness through a literature review.	career readiness by improving technical competencies (<i>hard skills</i>), work attitudes and ethics (<i>soft skills</i>), and understanding of real workplace conditions. The model also strengthens school-industry collaboration, preparing students for employment and entrepreneurship. The dominant Teaching Factory approach identified was a hybrid model
	Systematic Analysis of the Teaching Factory Model and Its Implementation in Vocational Education and Its Impact on Vocational School Students' Work Readiness (2025)	To systematically analyze the learning and real model, its model positively affects implementation strategies, and its impact on vocational students' work readiness in Indonesia.	combining project-based learning and real production activities. The model positively affects students' work readiness by improving soft skills, on motivation, self-confidence, and practical competencies. However, implementation challenges include limited facilities, inadequate teacher training, and insufficient industry collaboration. The implementation of Teaching Factory at SMK Muhammadiyah 6 Rogojampi includes
	Vocational School Students' Competency Development Through the Teaching Factory Model: The Role of Developing Students' Competencies in Preparing a Skilled Workforce (2026)	To investigate the curriculum alignment, real-implementation of world projects, and Teaching Factory performance-based evaluation. The model in vocational schools and its effectively improves contribution to students' competencies, work ethics, and work readiness through direct industrial experiences, according to strengthening both <i>hard skills</i> and <i>soft skills</i> . Challenges remain in infrastructure limitations and variations in students' initial competencies.	

Source: Compiled and synthesized from selected studies (2020–2026).

The application of the Teaching Factory (TeFa) model in Vocational High Schools (SMK) has consistently shown a positive impact on improving students' competence and work readiness. Of the five studies

analyzed, all agreed that this real production-based learning approach is able to bridge the gap between the world of education and the industrial world more effectively than conventional learning methods. Job readiness is not formed only through the transfer of knowledge in the classroom, but through authentic experiences that replicate the real working conditions (Billett, 2020).

One of TeFa's biggest contributions lies in its ability to shape students' technical competencies (hard skills) in a structured and standardized manner. When students engage in real production processes in a school environment, they learn to operate equipment, follow standard operating procedures, and complete work with specified time and quality targets. The results of the study showed that the implementation of TeFa contributed 46.2% to the improvement of students' work practice skills, which indicates that the quality of TeFa implementation is directly proportional to the achievement of students' competencies. This is in accordance with the concept of competency-based vocational education which emphasizes that competency mastery

can only be achieved through repetitive and measurable practice in the context of real work (Grollmann & Kruse, 2021).

On the other hand, TeFa has also proven to be effective in shaping the non-technical dimension (soft skills) of students which is no less important for the world of work. Discipline, responsibility, work ethic, collaborative ability, and self-confidence are attributes that consistently emerge as positive outcomes of the implementation of TeFa in various studies analyzed. Today's industry demands not only technically skilled workers, but also individuals who are able to adapt, communicate well, and work in teams (Putri et al., 2019). By placing students in a work situation that demands both dimensions of competence simultaneously, TeFa becomes the right instrument to prepare comprehensive vocational school graduates.

The success of TeFa is also inseparable from aligning the school curriculum with industry needs. This alignment process ensures that the competencies taught are relevant and up-to-date according to technological developments and job market needs.

An industry-aligned curriculum allows students to learn what is really needed in the field, rather than just generic theories (Mustapha et al., 2022). From the studies analyzed, curriculum alignment, implementation of real projects, and performance-based evaluation are proven to be the three main components that determine the effectiveness of TeFa in improving students' work readiness.

Faktor krusial lainnya adalah kuatnya kemitraan antara sekolah dan industri (school-industry linkage). Keterlibatan industri tidak hanya berhenti pada penyediaan materi atau peralatan, tetapi mencakup peran aktif dalam proses pembelajaran, evaluasi kompetensi, hingga pembukaan jalur rekrutmen bagi lulusan. Kajian yang dianalisis secara seragam menekankan bahwa siswa yang terlibat dalam pembelajaran TeFa dengan dukungan industri yang kuat cenderung lebih siap menghadapi dunia kerja dan bahkan memiliki orientasi wirausaha yang lebih baik. Kemitraan ini menciptakan ekosistem pembelajaran vokasi yang saling menguntungkan dan berkelanjutan (Pavlova, 2023).

However, a number of obstacles still hinder the optimization

of TeFa in the field. Limited facilities and infrastructure, lack of continuous training for teachers, and weak formalization of cooperation with industry are real challenges that are found repeatedly in these studies. Vocational teachers who manage production-based learning are required to have dual competencies, namely as educators as well as industry practitioners, so that teachers' professional development is an investment that cannot be ignored (Gilbert, 2024). In addition, the difference in initial competencies between students requires a differentiated approach to learning so that all students can achieve the competency standards set equally.

Overall, the evidence gathered from the five studies reinforces TeFa's position as a relevant and effective vocational learning model to address current employment challenges. In the context of Indonesia, where the unemployment rate of vocational school graduates is still a structural problem, strengthening the implementation of TeFa supported by consistent policies, adequate facilities, and structured industrial partnerships is an urgent strategic step to continue

to expand and improve its quality (Kemendikbudristek, 2022).

D. Conclusion

Based on the results of the literature review, it can be concluded that the Teaching Factory learning model has a significant role in improving the competence and work readiness of vocational school students. The implementation of TEFA is able to create a learning environment that resembles the industrial world so that students gain real work experience through projects and practices based on industry standards. In addition to improving technical skills (hard skills), TEFA also contributes to the development of non-technical skills (soft skills) such as discipline, responsibility, communication, teamwork, and adaptability. Various studies have shown that the implementation of TEFA has a positive influence on work practice skills, career readiness, learning motivation, and students' confidence in facing the world of work. Although there are still obstacles such as limited facilities, lack of teacher training, and suboptimal industrial partnerships, TEFA remains an effective and relevant vocational

learning model in preparing vocational school graduates who are competent, adaptive, and ready to compete in the industrial era 4.0 and society 5.0.

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